

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/713,115	TAKAHASHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thuy V. Tran	2821	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/17/2003.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☒ The drawings filed on 17 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☒ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

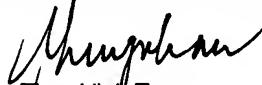
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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|---|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date <u>03/24/2004</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
|---|--|

  
 Thuy Vinh Tran  
 Primary Examiner  
 Art Unit: 2821

### **DETAILED ACTION**

This is a response to the Applicants' filing on 11/17/2003 and preliminary amendment concurrently filed therewith. In virtue of this filing and preliminary amendment, claims 1-15 are currently presented in the instant application.

#### ***Allowable Subject Matter***

1. Claims 1-15 are allowed.

#### ***Reasons for Allowance***

2. The following is an examiner's statement of reasons for allowance:

Prior art fails to disclose or fairly suggest:

- An electrode-less discharge lamp lighting apparatus which is electrically connected to a dimming circuit comprising a dimming controlling unit operable to detect a timing of a turn-on of the phase-controlled AC voltage, wherein, based on the detected timing, the dimming control unit outputs an intermittent command signal to vary a ratio between the lighting-up and lighting-out periods and allows a current whose value is at least a threshold to flow across output terminals of the AC/DC converting unit for at least a duration of a time lag between the turn-on of the phase-controlled AC voltage and the generation of the high-frequency voltage by the DC/AC converting unit, in combination with the remaining claimed limitations as called for in independent claim 1 (claims 2-10 are allowed since they are dependent on claim 1);
- A bulb-shaped electrode-less fluorescent lamp which is electrically connected to a dimming circuit comprising a dimming controlling unit operable to detect a timing of a turn-on of the phase-controlled AC voltage, wherein, based on the detected timing,

the dimming control unit outputs an intermittent command signal to vary a ratio between the lighting-up and lighting-out periods and allows a current whose value is at least a threshold to flow across output terminals of the AC/DC converting unit for at least a duration of a time lag between the turn-on of the phase-controlled AC voltage and the generation of the high-frequency voltage by the DC/AC converting unit, in combination with the remaining claimed limitations as called for in independent claim 11 (claims 12-14 are allowed since they are dependent on claim 11); and

- A discharge lamp lighting apparatus which is electrically connected to a dimming circuit comprising a dimming controlling unit operable to detect a timing of a turn-on of the phase-controlled AC voltage, wherein, based on the detected timing, the dimming control unit outputs an intermittent command signal to vary a ratio between the lighting-up and lighting-out periods and allows a current whose value is at least a threshold to flow across output terminals of the AC/DC converting unit for at least a duration of a time lag between the turn-on of the phase-controlled AC voltage and the generation of the high-frequency voltage by the DC/AC converting unit, in combination with the remaining claimed limitations as called for in independent claim 15.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Citation of relevant prior art***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Prior art Kominami et al. (U.S. Patent No. 6,661,185) discloses a dimmable self-ballasted fluorescent lamp and discharge lamp operating apparatus.
- Prior art Hui et al. (U.S. Patent No. 6,545,431) discloses a dimmable electronic ballast.
- Prior art Kominami et al. (U.S. Patent No. 6,509,698) discloses an operating apparatus of discharge lamp.
- Prior art Bergervoet et al. (U.S. Patent No. 5,243,261) discloses a modulated high frequency dimming circuit.

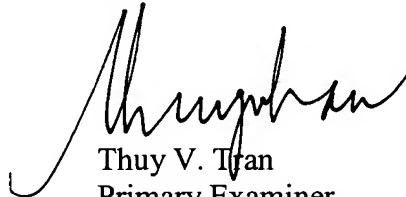
***Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thuy V. Tran  
Primary Examiner  
Art Unit 2821

11/28/2004